


<b>AWARD/CONTRACT</b>		1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)		RATING		PAGE OF PAGES 1   3	
2. CONTRACT (Proc. Inst. Ident.) NO. EP-C-17-031/68HE0C18F0901				3. EFFECTIVE DATE See Block 20C		4. REQUISITION/PURCHASE REQUEST/PROJECT NO. PR-R6-18-00143	
5. ISSUED BY CODE		CP0D		6. ADMINISTERED BY (If other than Item 5) CODE			
CP0D US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: W136 Cincinnati OH 45268-0001				SCD-C			
7. NAME AND ADDRESS OF CONTRACTOR (No., street, country, State and ZIP Code)  TETRA TECH, INC. Attn: George Townsend 10306 EATON PL STE 340 FAIRFAX VA 22030				8. DELIVERY <input type="checkbox"/> FOB ORIGIN <input checked="" type="checkbox"/> OTHER (See below)			
				9. DISCOUNT FOR PROMPT PAYMENT			
				10. SUBMIT INVOICES (4 copies unless otherwise specified) TO THE ADDRESS SHOWN IN		ITEM	
CODE 198549560		FACILITY CODE					
11. SHIP TO/MARK FOR CODE				12. PAYMENT WILL BE MADE BY CODE		RTP	
Multiple Destinations				RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711			
13. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: <input type="checkbox"/> 10 U.S.C. 2304 (c) ( ) <input checked="" type="checkbox"/> 41 U.S.C. 3304 (a) ( )				14. ACCOUNTING AND APPROPRIATION DATA See Schedule			
15A. ITEM NO	15B. SUPPLIES/SERVICES			15C. QUANTITY	15D. UNIT	15E. UNIT PRICE	15F. AMOUNT
	Continued						
15G. TOTAL AMOUNT OF CONTRACT						\$60,000.00	
<b>16. TABLE OF CONTENTS</b>							
(X)	SEC.	DESCRIPTION	PAGE(S)	(X)	SEC.	DESCRIPTION	PAGE(S)
PART I - THE SCHEDULE				PART II - CONTRACT CLAUSES			
	A	SOLICITATION/CONTRACT FORM			I	CONTRACT CLAUSES	
	B	SUPPLIES OR SERVICES AND PRICES/COSTS		PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH.			
	C	DESCRIPTION/SPECS./WORK STATEMENT			J	LIST OF ATTACHMENTS	
	D	PACKAGING AND MARKING		PART IV - REPRESENTATIONS AND INSTRUCTIONS			
	E	INSPECTION AND ACCEPTANCE			K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS	
	F	DELIVERIES OR PERFORMANCE			L	INSTRS., CONDS., AND NOTICES TO OFFERORS	
	G	CONTRACT ADMINISTRATION DATA			M	EVALUATION FACTORS FOR AWARD	
	H	SPECIAL CONTRACT REQUIREMENTS					
<b>CONTRACTING OFFICER WILL COMPLETE ITEM 17 (SEALED-BID OR NEGOTIATED PROCUREMENT) OR 18 (SEALED-BID PROCUREMENT) AS APPLICABLE</b>							
17. <input checked="" type="checkbox"/> CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return _____ copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (Attachments are listed herein.)				18. <input type="checkbox"/> SEALED-BID AWARD (Contractor is not required to sign this document.) Your bid on Solicitation Number _____, including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your bid, and (b) this award/contract. No further contractual document is necessary. (Block 18 should be checked only when awarding a sealed-bid contract.)			
19A. NAME AND TITLE OF SIGNER (Type or print)				20A. NAME OF CONTRACTING OFFICER Mark Cranley			
19B. NAME OF CONTRACTOR		19C. DATE SIGNED		20B. UNITED STATES OF AMERICA		20C. DATE SIGNED	
BY  (Signature of person authorized to sign)				BY  (Signature of the Contracting Officer)		ELECTRONIC SIGNATURE  09/27/2018	

<b>CONTINUATION SHEET</b>	REFERENCE NO. OF DOCUMENT BEING CONTINUED EP-C-17-031/68HE0C18F0901	PAGE 2	OF 3
---------------------------	--	-----------	---------

NAME OF OFFEROR OR CONTRACTOR  
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	DUNS Number: 198549560 FFP TO Revision of Existing Criteria for Oklahoma Wadeable Streams  Period of Performance: Base Year 0001 10/1/18 - 9/30/19 Option 1 0001-2 10/1/19 - 1/31/20  Base Year 0001 fully funded at the time of award \$60,000.00 TOCOR: David Peck Max Expire Date: 01/31/2020 Accounting Info: 18-19-C-26XM000-000FK9-2532-26A6F-1826XME124-001 BFY: 18 EFY: 19 Fund: C Budget Org: 26XM000 Program (PRC): 000FK9 Budget (BOC): 2532 Cost: 26A6F DCN - Line ID: 1826XME124-001 Period of Performance: 10/01/2018 to 01/31/2020				
0001	Base Task Order Issuance Line Item: Technical Support for EPA/ORD/NCEA's Ecological Assessment Programs  Delivery: 09/30/2019 Delivery Location Code: CPOD CPOD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268 USA Amount: \$60,000.00				60,000.00
0001-2	Option Task Order Issuance Line Item: Technical Support for EPA/ORD/NCEA's Ecological Assessment Programs (Option Line Item) 01/31/2020  Delivery: 01/31/2020 Delivery Location Code: CPOD CPOD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: W136 Cincinnati OH 45268-0001 USA Amount: \$29,984.00  Delivery-Invoice Payment Schedule shall not exceed a frequency greater than once a month and 90% of the task order price. Acceptance for invoicing is based on deliverable approval by the Continued ...				29,984.00

NAME OF OFFEROR OR CONTRACTOR  
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>TOCOR. For efficient processing IAW FAR clause 52.232-32, performance based payment invoicing amounts will not be submitted until the TOCOR provides deliverable approval. The TOCOR will notify Tetra Tech within 14 days of submission of a deliverable of EPAs intention to approve or disapprove.</p> <p>TOCOR David Peck/ (541) 754-4426/peck.david@epa.gov ALTOCOR Forrest John/ (214) 665-8368/john.forrest@epa.gov</p> <p>The total amount of award: \$89,984.00. The obligation for this award is shown in box 15G.</p>				

**Performance Work Statement  
CONTRACT NO. EP-C-17-031  
TASK ORDER PR-R6-18-00143/68HE0C18F0901**

**TITLE: REVISION OF EXISTING BIOLOGICAL CRITERIA FOR OKLAHOMA WADEABLE STREAMS**

**A. TASK ORDER CONTRACTING OFFICER REPRESENTATIVE (TOCOR)**

**NAME:** David V. Peck, EPA Office of Research and Development  
**TITLE:** Research Ecologist  
**PHONE:** (541) 754-4426  
**FAX:** (541) 754-4799  
**E-MAIL:** [peck.david@epa.gov](mailto:peck.david@epa.gov)

**ALTERNATE TASK ORDER COR (ALT TOCOR)**

**NAME:** Forrest B. John, EPA Region 6  
**TITLE:** Environmental Scientist  
**PHONE:** (214) 665-8368  
**FAX:** (214) 665-6689  
**E-MAIL:** [john.forrest@epa.gov](mailto:john.forrest@epa.gov)

**B. PERIOD OF PERFORMANCE:**

**Base (Tasks 1 – 6) – October 1, 2018 – September 30, 2019**

**Option Period 1 (Tasks 6/7) – October 1, 2019 – January 31, 2020**

**C. TASKS: REVISION OF EXISTING BIOLOGICAL CRITERIA FOR OKLAHOMA WADEABLE STREAMS**

**Background**

This RARE project proposes to integrate existing chemical, physical and biological data from multiple sources and apply analytical tools/methods to generate revision of existing biological criteria for Oklahoma wadeable streams.

Oklahoma has worked towards the systematic evaluation of their biological and water quality monitoring programs to support implementation of and any revisions to the state's biological criteria. A third party evaluation of the Oklahoma biological program was conducted under another contract with EPA. The evaluation yielded six recommendations which provide a technical framework for future development and/or revision of biological criteria in Oklahoma. These recommendations include the following:

1. Natural Variability—Modernizing the approach to account for regional variation and stratification in the classification of stream and riverine assemblages is needed.
2. Reference Site Selection—A quantitative stressor gradient approach is needed to screen reference sites with a primary reliance on abiotic factors. Developing the approach is necessary to address reference condition and support improvements in discriminatory power.

3. Reference Conditions—The sufficiency of reference site density across stream classes and waterbody types will need to be determined.
4. Ecological Attributes—Will require updating the fish and macroinvertebrate IBIs using contemporary approaches to metric and index development and calibration.
5. Discriminatory Capacity—Improving the discriminatory power is contingent on addressing natural variability, reference sites selection, reference condition, and ecological attributes.

Implementation of these recommendations, in which contemporary approaches to criteria development are evaluated and updates to key components of the biological assessment process are examined, will improve the state's ability to sustain, assess, restore and preserve stream resources.

The approach will first be to develop a relational database of biological data (i.e. fish and macroinvertebrates), chemical data and habitat data collected by multiple agencies from Wadeable streams in Oklahoma and potentially neighboring states. These data are readily available but will require considerable effort to organize into a single relational database. GIS-based watershed delineation and land-use data will also be assembled and related to sampling sites. Data will be explored and classification schemes derived in order to minimize variability within the dataset and generate more robust relationships. Modern and alternative biological criteria development approaches will be evaluated which may include for example a Biological Condition Gradient or possibly the exploration and use of O/E models. Additionally, a proof-of-concept demonstration shall be produced in order to provide a roadmap for future biological criteria revision.

#### **Task 1 – Scoping Meeting and Work Plan Review**

The contractor shall participate in a Scoping Meeting with the EPA TOCOR and the ALT TOCOR. The scoping meeting will be conducted via conference call and discussions will involve the primary objectives of the project, approaches, logistics, review of the work plan that was prepared as part of the performance work statement (PWS) proposal, requirements for the QAPP, and coordination with the TOCOR/ALT TOCOR, EPA National Health and Environmental Effects Research Laboratory (NHEERL) - Western Ecology Division (WED), Office of Research and Development, Oklahoma Water Resources Board (OWRB), and other state of Oklahoma agencies.

The contractor task order team shall include experience and expertise in: (a) fish and macroinvertebrate ecology and geomorphology; (b) developing both biological and geomorphology indicators; (c) assembling data from various sources; (d) establishment and evaluation of biological criteria; and (e) statistical analysis of environmental data. The individuals must have an outstanding professional record as demonstrated by peer reviewed publications, biocriteria related work, awards, and service to relevant professional societies. The contractor shall be available to meet with EPA and state staff regularly in order to assemble data that may or may not be readily available through electronic means.

#### **Task 1 Deliverables**

1. Within 10 calendar days after the Scoping Meeting, the contractor shall prepare and provide the TOCOR/ALT TOCOR with a concise written summary which identifies participants, key points discussed and areas of consensus.

#### **Task 2 – Quality Assurance Project Plan**

No later than 30 calendar days after the Scoping Meeting (Task 1), the contractor shall submit a QAPP in accordance with the contract – EPA Requirements for Quality Assurance Project Plans (QA/R5) dated 3/20/2008. During the term of the Task Order, the contractor shall be responsible for updating the QAPP to reflect any modifications.

### **Task 2 Deliverables**

1. Within 30 calendar days after the scoping meeting, the contractor shall prepare a Draft Quality Assurance Project Plan in accordance with EPA criteria for review by the TOCOR/ALT TOCOR and their respective QA Managers
2. Within 10 calendar days after receiving comments on the Draft Quality Assurance Project Plan, the contractor shall submit Final Quality Assurance Project Plan to the TOCOR/ALT TOCOR for EPA approval.

### **Task 3 – Revision of Existing Biological Criteria for Oklahoma Wadeable Streams Approach**

As part of the Work Plan/Proposal, the contractor shall describe an approach to develop biological criteria/translators for Oklahoma's narrative biological water quality standard. See Oklahoma Administrative Code 785:45-5-12(f)(5). For example, the stepwise criteria development approach described in *Biological Criteria Technical Guidance for Streams and Small Rivers* Revised Edition (EPA 1996). The contractor shall identify biological criteria development approaches, which could include establishment of a Biological Condition Gradient, Observed vs. Expected models, re-establishment of minimally- (or least-) disturbed distributions based upon further site classification, that can be applied to existing data, and develop a proof-of-concept demonstration that will aid the state by providing a stepwise guide for future biological criteria revisions.

### **Task 3 Deliverables**

1. Within 60 calendar days of the QAPP approval (Deliverable 2.2), the contractor shall prepare a Draft Approach for Revising Existing Biological Criteria for Oklahoma Wadeable Streams. The approach shall include: (a) data acquisition and management; (b) site classification; (c) identification of proposed criteria development approaches; and (d) proof of concept including an approach to determine biological impairment.
2. Within 30 calendar days of receiving comments by the TOCOR/ALT TOCOR on the Draft Approach for Revising Existing Biological Criteria for Oklahoma Wadeable Streams, the contractor shall prepare a Final Approach for Revising Existing Biological Criteria for Oklahoma Wadeable Streams.

### **Task 4 – Aggregate, QA, and Manage Data for Use throughout the Task Order**

The contractor shall be tasked with compiling existing biological data (i.e. fish and macroinvertebrates), chemical data and habitat data collected by multiple agencies from wadeable streams in Oklahoma and (potentially) neighboring states. The state of Oklahoma has already assembled much of the data collected by multiple Oklahoma agencies into a single database. In addition to data collected under state programs, data collected for EPA's National Rivers and Streams Assessment will be included in the data aggregation. Additionally, the contractor shall review other available stream sampling data provided by the State of Oklahoma and/or as suggested by the TOCOR/ALT TOCOR to determine whether and how

those data may be used in the analysis. In coordination with the contractor, GIS-based watershed data (e.g., watershed area associated with each sampling location, elevation, mean annual precipitation, generalized geology, land cover, etc.) will be provided by EPA Region 6 with the contractor tasked with merging with river data into a comprehensive dataset.

Exploratory data analysis techniques (e.g., correlation analysis, scatter plots, histograms, etc.) will be used to identify potential outliers or other data quality issues. Available supplemental data such as field data forms, field photographs, and inspection of site settings using Google Earth Pro may be used to validate, correct, or reject data flagged as questionable during quality assurance (QA) review.

Furthermore, data may be analyzed for comparability among data sources and sampling methods so that biological data can be either pooled or flagged for separate treatment for methods that are not comparable.

#### **Task 4 Deliverables**

1. Within 120 calendar days of the Final Revision of Existing Biological Criteria for Oklahoma Wadeable Streams Approach document (Deliverable 3,2), the contractor shall complete the compilation and exploratory data analyses of existing wadeable streams data for Oklahoma and neighboring states, as needed, into a relational database appropriate for modern and alternative biological criteria development approaches.
2. Within 30 calendar days of Deliverable 4.1 completion, the compiled data and data analyses shall be delivered to the TOCOR/ALT TOCOR in a Microsoft relational database appropriate for alternative biological criteria development approaches as directed by the TOCOR/ALT TOCOR in collaboration with NHEERL and OWRB.

#### **Task 5 – Analyze and Develop Site Classification Scheme**

Site classification for biological types proceeds using grouping techniques such as non-metric multi-dimensional scaling (NMS), cluster analysis, metric distribution comparison, and taxa geographic distributions. Starting with the premise that ecoregions might prove to be an adequate site classification framework for fish and macroinvertebrates in Oklahoma wadeable streams, the contractor shall consider using the classification techniques to test classification schemes related to ecoregions and other categorical or continuous variables. Additional site classes may focus on hydrological flow – ecology relationship and flow persistence more so than regionalization. Variability remaining after categorical classification (e.g., from catchment size) might be addressed through further classification schemes. The classification scheme must ultimately be approved by the TOCOR/ALT TOCOR in consultation with NHEERL and OWRB. During the classification process, taxa may be categorized in terms of regional distribution and response to a general stressor gradient. The gradient may be defined using land use and other site variables.

#### **Task 5 Deliverables**

1. Within 60 calendar days of Task 4 completion, the contractor shall deliver to the TOCOR/ALT TOCOR a Draft Oklahoma Wadeable Streams Classification Scheme.

2. Within 30 calendar days after receiving comments from the TOCOR/ALT TOCOR on the Draft Oklahoma Wadeable Streams Classification Scheme, the contractor shall prepare a Final Oklahoma Wadeable Streams Classification Scheme.

#### **Task 6 – Select Biological Response Indicators and Determine Range of Values for Reference Sites**

Biological indicators (e.g., fish IBI/MMI, fish/invertebrate O/E models) shall be selected based on for example (a) association with designated uses; (b) quantifiable with available or accessible data; (c) dependable measurement characteristics; and (d) appropriate for the specific statistical method(s) used. The contractor shall consider the range and statistical distribution of the selected biological indicators similar to those in Stoddard et al. 2005. Environmental monitoring and assessment program (EMAP) western streams and rivers statistical summary. EPA 620/R-05/006. U.S. Environmental Protection Agency, Washington, DC. Observed deviations from predicted indicator values shall be computed using data from all sites for use in subsequent analyses. Depending upon available biological data, an appropriate biological response indicator shall be selected or constructed from existing metric values and/or data.

#### **Task 6 Deliverables**

1. Within 60 calendar days of the completion of Task 5, the contractor shall deliver to the TOCOR/ALT TOCOR, Draft Biological Response Indicators.
2. Within 30 calendars of receiving comments by the TOCOR/ALT TOCOR on the Draft Biological Response Indicators, the contractor shall prepare a Final Biological Response Indicators.

#### **Task 7 – Final Report**

The contractor shall produce a final report to be reviewed by the TOCOR/ALT TOCOR, NHEERL, and OWRB. The report shall include background information on the data sets used for the project; the criteria development process including classification schemes employed and biological response indicators.

#### **Task 7 Deliverables**

1. Within 60 days of completion of Task 6, a draft final project report described shall be delivered to the TOCOR/ALT TOCOR for review. The draft report and other products shall be provided in the most appropriate format, e.g., MS Word, MS Excel, MS PowerPoint, and/or pdf.
2. Within 30 calendar days of approval of the draft report by the TOCOR/ALT TOCOR, the contractor shall deliver a Final Report.

#### **D. SCHEDULE OF BENCHMARKS & DELIVERABLES**

<b>TASKS</b>	<b>TASK DELIVERABLES</b>	<b>DELIVERABLE DUE DATES</b>
<b>Task 1</b>	1.1 Scoping Meeting and Work Plan Review Notes	10 calendar days of Scoping Meeting
<b>Task 2</b>	2.1 Draft Quality Assurance Project Plan	30 calendar days of Task 1 Completion
	2.2 Final Quality Assurance Project Plan	10 calendar days of Deliverable 2.1

<b>TASKS</b>	<b>TASK DELIVERABLES</b>	<b>DELIVERABLE DUE DATES</b>
<b>Task 3</b>	3.1 Draft Revision of Existing Biological Criteria Approach	60 calendar days of Deliverable 2.2
	3.2 Final Revision of Existing Biological Criteria Approach	30 calendar days of Deliverable 3.1
<b>Task 4</b>	4.1 Aggregate, QA, and Manage Data	120 calendar days of Deliverable 3.2
	4.2 Aggregated Data and Data Analyses	30 calendar days of Deliverable 4.1
<b>Task 5</b>	5.1 Analyze and Develop Classification Scheme	60 calendar days of Deliverable 4.2
	5.2 Final Classification Scheme	30 calendar days of Deliverable 5.1
<b>Task 6</b>	6.1 Draft Biological Response Indicators	60 calendar days of Deliverable 5.2
	6.2 Final Biological Response Indicators	30 calendar days of Deliverable 6.1
<b>Task 7</b>	7.1 Draft Report	60 calendar days of Deliverable 6.2
	7.2 Final Report	30calendar days of Deliverable 7.1

#### **E. REPORTING**

All documentation and reporting under this TO shall be in compliance with contract requirements. All products shall be subject to EPA ORD clearance requirements.

Additional requirements specific to this TO are as follows: Electronic deliverables must be in an original file format that can be supported by EPA after the end of the Period of Performance of the TO. The standard office software at EPA is MS Office. The standard GIS software at EPA is ESRI ArcGIS.

#### **F. TRAVEL**

Travel is not anticipated.

- G.** The Contractor shall refer any questions relating to the interpretation of EPA policy, guidance, or regulation to the TOCOR/ALT TOCOR.

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>			1. CONTRACT ID CODE		PAGE OF PAGES		
					1 3		
2. AMENDMENT/MODIFICATION NO.		3. EFFECTIVE DATE		4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO. (If applicable)	
P00001		See Block 16C		PR-R6-19-00085			
6. ISSUED BY		CODE		7. ADMINISTERED BY (If other than Item 6)		CODE	
CAD							
CAD							
US Environmental Protection Agency							
26 West Martin Luther King Drive							
Mail Code: W136							
Cincinnati OH 45268-0001							
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)				(x)		9A. AMENDMENT OF SOLICITATION NO.	
TETRA TECH, INC.							
Attn: George Townsend						9B. DATED (SEE ITEM 11)	
10306 EATON PL STE 340							
FAIRFAX VA 22030							
				x		10A. MODIFICATION OF CONTRACT/ORDER NO.	
						EP-C-17-031	
						68HE0C18F0901	
						10B. DATED (SEE ITEM 13)	
						09/27/2018	
CODE 198549560		FACILITY CODE					
<b>11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS</b>							
<input type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended. <input type="checkbox"/> is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. ACCOUNTING AND APPROPRIATION DATA (If required)				Net Increase:		\$29,984.00	
See Schedule							
<b>13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.</b>							
CHECK ONE		A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.					
		B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).					
		C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:					
		D. OTHER (Specify type of modification and authority)					
X		UNILATERAL - LIMITATIONS OF FUNDS - FULL FUNDING AND EXERCISE OF 1					
<b>E. IMPORTANT:</b> Contractor <input checked="" type="checkbox"/> is not <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)							
DUNS Number: 198549560							
TOCOR: David Peck Max Expire Date: 01/31/2020							
LIST OF CHANGES:							
Reason for Modification: Full Funding and Exercise of FFP Option 1							
New Total Amount for this Version: \$29,984.00							
New Total Amount for this Award: \$89,984.00							
Obligated Amount for this Modification: \$29,984.00							
New Total Obligated Amount for this Award: \$89,984.00							
CHANGES FOR LINE ITEM NUMBER: 0001-2							
Continued ...							
Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)			
				Andrea Dehne			
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA		16C. DATE SIGNED	
				 (Signature of Contracting Officer)		12/13/2018	
(Signature of person authorized to sign)				ELECTRONIC SIGNATURE			

<b>CONTINUATION SHEET</b>	REFERENCE NO. OF DOCUMENT BEING CONTINUED	PAGE	OF
	EP-C-17-031/68HE0C18F0901/P00001	2	3

NAME OF OFFEROR OR CONTRACTOR  
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>Obligated Amount for this Modification: \$29,984.00</p> <p>NEW ACCOUNTING CODE ADDED: Account code: 18-19-C-26XM000-000FK7XR4-2532-26A6F-1926XME019-001</p> <p>Beginning FiscalYear 18 Ending Fiscal Year 19 Fund (Appropriation) C Budget Organization 26XM000 Program (PRC) 000FK7XR4 Budget (BOC) 2532 Job # (Site/Project) Cost Organization 26A6F DCN-LineID 1926XME019-001 Amount: \$29,984.00 Subject To Funding: N</p> <p>Payment Address: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711</p> <p>Delivery: 01/31/2020 Delivery Location Code: CPOD CPOD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: W136 Cincinnati OH 45268-0001 USA</p> <p>Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711</p> <p>Period of Performance: 10/01/2018 to 01/31/2020 Delivery-Invoice Payment Schedule shall not exceed a frequency greater than once a month and 90% of the task order price. Acceptance for invoicing is based on deliverable approval by the TOCOR. For efficient processing IAW FAR clause Continued ...</p>				

<b>CONTINUATION SHEET</b>	REFERENCE NO. OF DOCUMENT BEING CONTINUED	PAGE	OF
	EP-C-17-031/68HE0C18F0901/P00001	3	3

NAME OF OFFEROR OR CONTRACTOR  
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>52.232-32, performance based payment invoicing amounts will not be submitted until the TOCOR provides deliverable approval. The TOCOR will notify Tetra Tech within 14 days of submission of a deliverable of EPAs intention to approve or disapprove.</p> <p>TOCOR David Peck/(541)754-4426/peck.david@epa.gov ALTOCOR Forrest John/(214)665-8368/john.forrest@epa.gov</p>				

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>			1. CONTRACT ID CODE		PAGE OF PAGES 1 2		
2. AMENDMENT/MODIFICATION NO. P000002		3. EFFECTIVE DATE See Block 16C		4. REQUISITION/PURCHASE REQ. NO. PR-R6-20-00069		5. PROJECT NO. (If applicable)	
6. ISSUED BY CAD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: W136 Cincinnati OH 45268-0001		CODE CAD		7. ADMINISTERED BY (If other than Item 6)		CODE	
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) TETRA TECH, INC. Attn: George Townsend 10306 EATON PL STE 340 FAIRFAX VA 22030				(x)		9A. AMENDMENT OF SOLICITATION NO.	
						9B. DATED (SEE ITEM 11)	
				x		10A. MODIFICATION OF CONTRACT/ORDER NO. EP-C-17-031 68HE0C18F0901	
						10B. DATED (SEE ITEM 13) 09/27/2018	
CODE 198549560		FACILITY CODE					

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.  
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

See Schedule

**13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER (Specify type of modification and authority) BILATERAL - Mutual Agreement for No Cost PoP Extension

**E. IMPORTANT:** Contractor ☐ is not ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

DUNS Number: 198549560

TOCOR: David Peck Max Expire Date: 05/29/2020

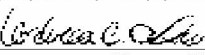
LIST OF CHANGES:

Reason for Modification: Other Administrative Action - Mutual Agreement No Cost PoP Extension due to deliverable review delays.

Period Of Performance End Date changed from 31-JAN-20 to 29-MAY-20

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Andrea Dehne	
15B. CONTRACTOR/OFFEROR  (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA  (Signature of Contracting Officer)	16C. DATE SIGNED 12/17/2019

Previous edition unusable

<b>CONTINUATION SHEET</b>	REFERENCE NO. OF DOCUMENT BEING CONTINUED	PAGE	OF
	EP-C-17-031/68HE0C18F0901/P00002	2	2

NAME OF OFFEROR OR CONTRACTOR  
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>Payment:</p> <p>RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711</p> <p>Period of Performance: 10/01/2018 to 05/29/2020 Delivery-Invoice Payment Schedule shall not exceed a frequency greater than once a month and 90% of the task order price. Acceptance for invoicing is based on deliverable approval by the TOCOR. For efficient processing IAW FAR clause 52.232-32, performance based payment invoicing amounts will not be submitted until the TOCOR provides deliverable approval. The TOCOR will notify Tetra Tech within 14 days of submission of a deliverable of EPAs intention to approve or disapprove.</p> <p>TOCOR David Peck/(541)754-4426/peck.david@epa.gov ALTOCOR Forrest John/(214)665-8368/john.forrest@epa.gov</p>				

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>			1. CONTRACT ID CODE		PAGE OF PAGES		
					1 2		
2. AMENDMENT/MODIFICATION NO.		3. EFFECTIVE DATE		4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO. (If applicable)	
P00003		See Block 16C		PR-R6-20-00400			
6. ISSUED BY		CODE		7. ADMINISTERED BY (If other than Item 6)		CODE	
CAD							
US Environmental Protection Agency							
26 West Martin Luther King Drive							
Mail Code: W136							
Cincinnati OH 45268-0001							
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)				(x)		9A. AMENDMENT OF SOLICITATION NO.	
TETRA TECH, INC.							
Attn: George Townsend						9B. DATED (SEE ITEM 11)	
10306 EATON PL STE 340							
FAIRFAX VA 22030							
				x		10A. MODIFICATION OF CONTRACT/ORDER NO.	
						EP-C-17-031	
						68HE0C18F0901	
						10B. DATED (SEE ITEM 13)	
						09/27/2018	
CODE 198549560		FACILITY CODE					

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.  
 Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

See Schedule

**13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER (Specify type of modification and authority) BILATERAL AGREEMENT - Order Closeout in its Entirety - All Deliverables Received and Invoices Paid

**E. IMPORTANT:** Contractor ☐ is not ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

DUNS Number: 198549560

TOCOR: David Peck Max Expire Date: 05/29/2020

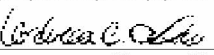
LIST OF CHANGES:

Reason for Modification: FFP Order Closeout in its Entirety - All Deliverables Received and Invoices Paid

Total Amount for this Modification: \$0.00

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
		Andrea Dehne	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		 (Signature of Contracting Officer)	08/24/2020

Previous edition unusable

<b>CONTINUATION SHEET</b>	REFERENCE NO. OF DOCUMENT BEING CONTINUED	PAGE	OF
	EP-C-17-031/68HE0C18F0901/P00003	2	2

NAME OF OFFEROR OR CONTRACTOR  
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>Payment:</p> <p>RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711</p> <p>Period of Performance: 10/01/2018 to 05/29/2020 Delivery-Invoice Payment Schedule shall not exceed a frequency greater than once a month and 90% of the task order price. Acceptance for invoicing is based on deliverable approval by the TOCOR. For efficient processing IAW FAR clause 52.232-32, performance based payment invoicing amounts will not be submitted until the TOCOR provides deliverable approval. The TOCOR will notify Tetra Tech within 14 days of submission of a deliverable of EPAs intention to approve or disapprove.</p> <p>TOCOR David Peck/(541)754-4426/peck.david@epa.gov ALTOCOR Forrest John/(214)665-8368/john.forrest@epa.gov</p>				